

FLY HIGH WITH

GOLD WEATHER PM

It's a time-consuming, painstaking task to keep your birds flying when the mercury plummets and Old Man Winter throws snow, wind and ice at you. But top-notch aircraft maintainers know that preventive maintenance is critical during cold, colder, and coldest weather.

When winter starts putting its bite on you, move your aircraft inside to perform maintenance. If you can't and you're faced with some extended time outside, use a maintenance shelter or rig a temporary shelter out of tentage, other canvas, or a salvaged cargo parachute canopy. Warm your shelter with a ground heater.

A warm and ventilated work area will let you get that PM done without the nuisance of bulky clothing and heavy gloves.

Here is some other stuff to concentrate on during cold weather:

COLD FUEL~ Water in fuel can form ice that blocks fuel lines. So keep fuel tanks topped off. The gap between the top of the tank and the fuel is full of cold moist air. When that air condenses, water drips into your fuel. When you take fuel samples, drain enough fuel to get rid of all that water. Drain the sumps daily.

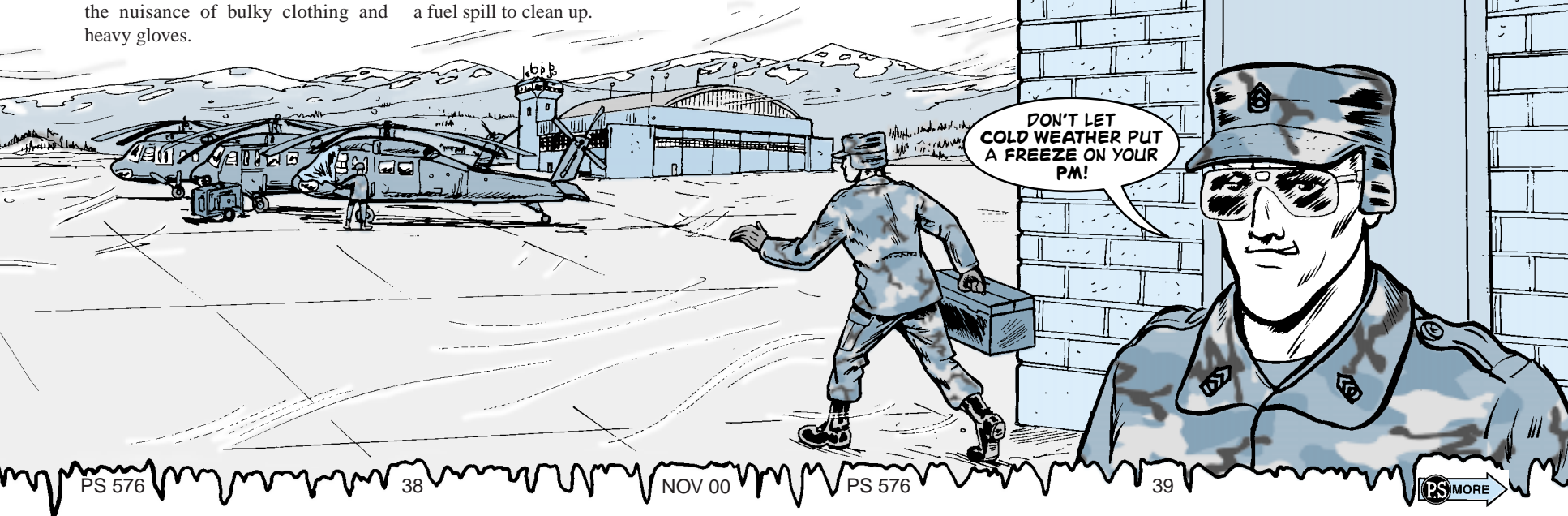
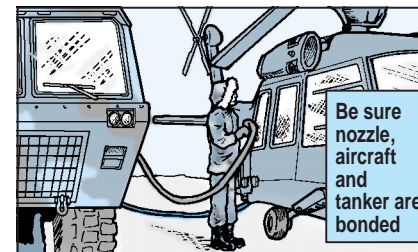
When you refuel a bird outside in sub-zero temperatures, always check the fuel level before moving it inside. When an aircraft with a full fuel tank is moved into the hanger, the fuel level will rise with the higher temperature. Opening the filler cap could give you a fuel spill to clean up.

Static electricity can fire up your winter real fast, so be extremely careful during refueling. The lower the temperature, and the drier the air, the more that static electricity becomes a hazard.

Static can result from aircraft moving through the air or by the movement of frost or snow from the aircraft. Fuel flowing through the filler neck can also generate a spark that ignites fuel.

So make sure you find a good place to ground the aircraft. Also make sure the aircraft and tanker are bonded together, and the

nozzle is bonded to the bird before you remove the cap. When you're freezing while refueling you might be tempted to neglect a ground. **Don't!** You must follow grounding procedures without shortcuts.



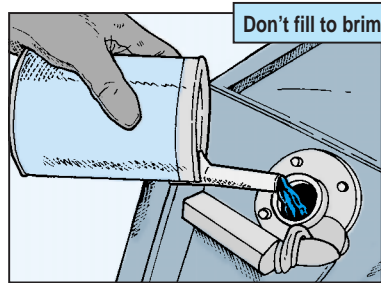
If you're not using a closed circuit fueling nozzle, put the regular nozzle in all the way. That keeps the danger of static down and reduces the chance for a fuel spill.

Use extra care if you have to take fuel out of an aircraft. Fuel spilled on your skin can cause frostbite.

COLD OIL AND GREASE~ Fuel is not the only fluid affected by cold temperatures. As the mercury drops, oil thickens, fuel's harder to ignite, and grease gels. So you must use the right fuel and lube for cold conditions. The lube chart in your TM lists the right fuel, oil and grease to use.

When you service an oil tank on a stone-cold aircraft, never fill it to the

brim. Otherwise, when the oil heats up, the tank will overflow.



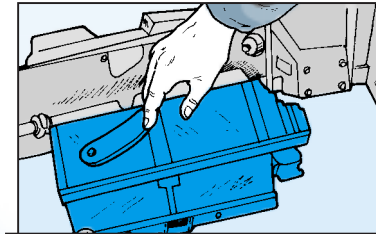
Oil leaks are a chronic problem in winter weather. So check connections, joints and seals regularly.

COLD SEALS~ Old Man Winter is hard on seals and gaskets. When they contract due to the cold, that opens the door for leaks. Moisture can seep in around seals and freeze. The ice formed will cut seals. Make a list of your aircraft's seal and gasket potential

trouble spots. Post that list next to these tips on your bulletin board.

COLD BATTERIES~ Unless you're in the deep freeze for a long time, your nickel-cadmium batteries will do their job without much extra effort on your part. But cold starts will shorten battery life.

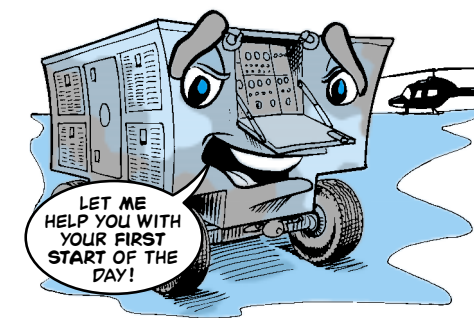
So, when possible, bring your batteries in from the cold if the weatherman predicts several days of subfreezing temperatures. If it's not possible, turn on the landing lights, searchlight or other equipment for 30 seconds before an engine start.



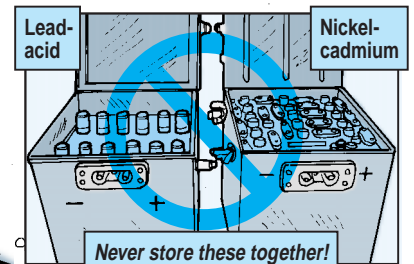
Remove batteries and store in warm place

That "load" will warm up the battery a bit. Always use an auxiliary ground power unit (AGPU) on the first

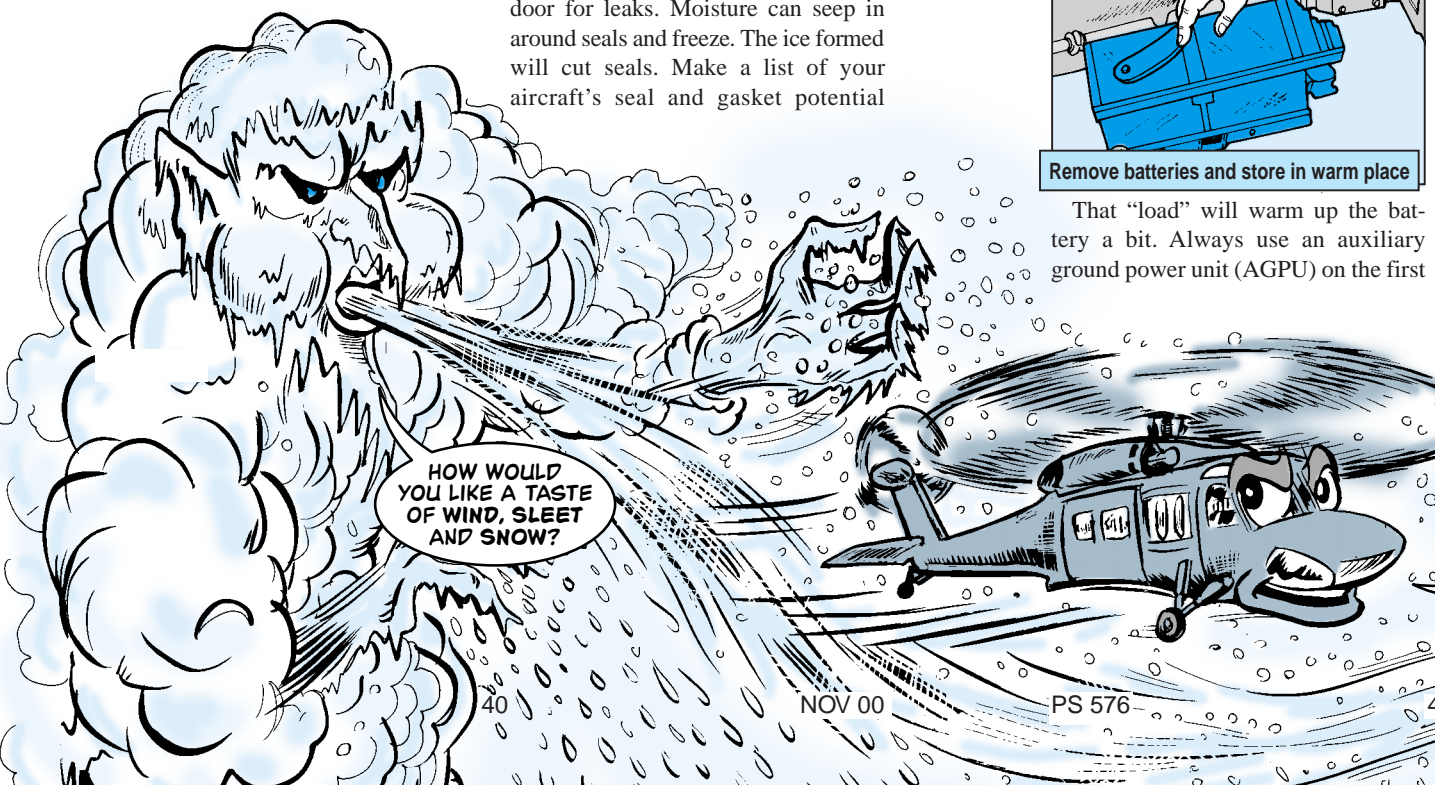
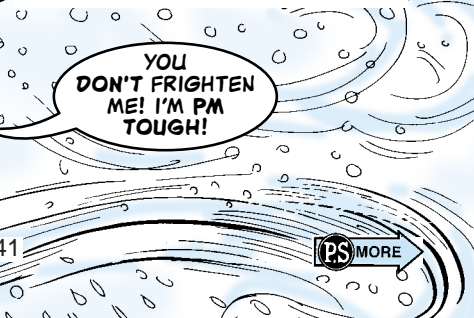
start of the day. It prevents a lot of drain on cold batteries.



Lead-acid batteries should also be kept warm. Cold weather saps their charge much faster than it does a nickel-cadmium battery. If you bring your batteries inside, never store nickel-cadmium and lead-acid in the same area. Fumes from a lead-acid battery can cause a nickel-cadmium battery to discharge.



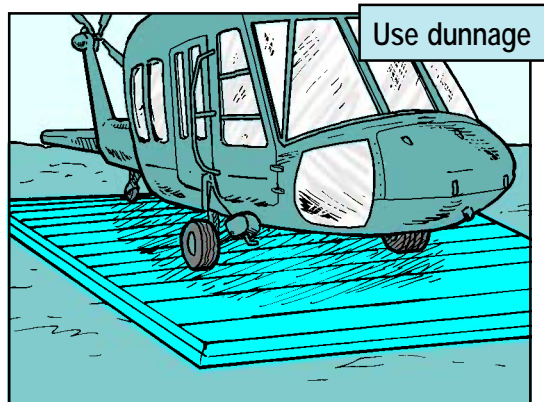
Store the batteries on a shelf or on dunnage, not on a bare floor.



COLD TIRES~ Cold reduces tire air pressure, so check your helicopter's tire pressure often.

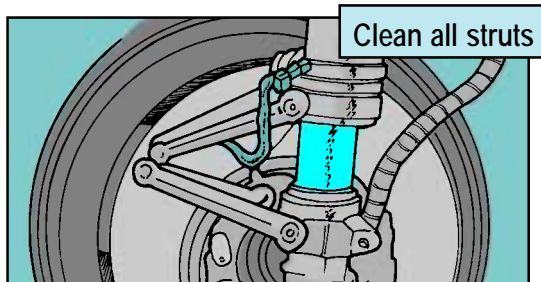
Tires frozen to the ground can be freed with liquid deicer. Move the aircraft immediately because deicer will form slush and re-freeze.

Use boards, dunnage or something similar beneath tires to keep them off snow or ice.



Check your landing gear often. Use a clean rag dampened with hydraulic

fluid to remove ice, dirt and grit from struts and pistons.



Service pressurized systems according to the instructions in each aircraft maintenance manual. Remember that any moisture will freeze into ice crystals and damage seals.

Do not bend rubber hoses or rubber-covered wires while they're cold soaked. Rubber gets brittle and stiff and could crack.

COLD WEATHER GUIDES~ for more information on winter maintenance operations, check out FM 31-70, *Basic Cold Weather Manual* (Apr 68) and FM 31-71, *Northern Operations* (Jun 71).

